

Datasheet

ADA-7021

Multimode Fibre-Optic to Current Loop Converter



APPLICATION

Fibre-Optic converter ADA-7021 is a device used to connect devices with Current Loop interface without interfering with the data format. The use of fibre-optic provides complete isolation between connected devices and resistance to interference on the transmission bus. The fibre connection is implemented by a line consisting of two fibres - one fiber for the TX signal and one for RX signal. Using two this type converters, can be use for communication with devices quite distant from each other eg. controllers, scales etc.

ADA-7021 is equipped with screw terminal block for Current Loop and power supply connections. To Current Loop bus built on the ADA-7021 can be connected 2 devices operating in half duplex mode or full duplex mode in point-to-point topology.

Overvoltage protection was made on base safety diodes and fuses on each Current Loop lines.

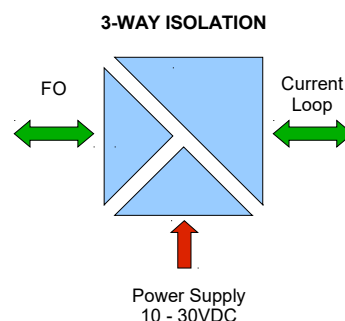
This converter has internal, low energy surge protection for each Current Loop lines however it is recommended to use the external lightning arresters (typical protection of telephone line) for the lightning protection of lines.

TECHNICAL DATA

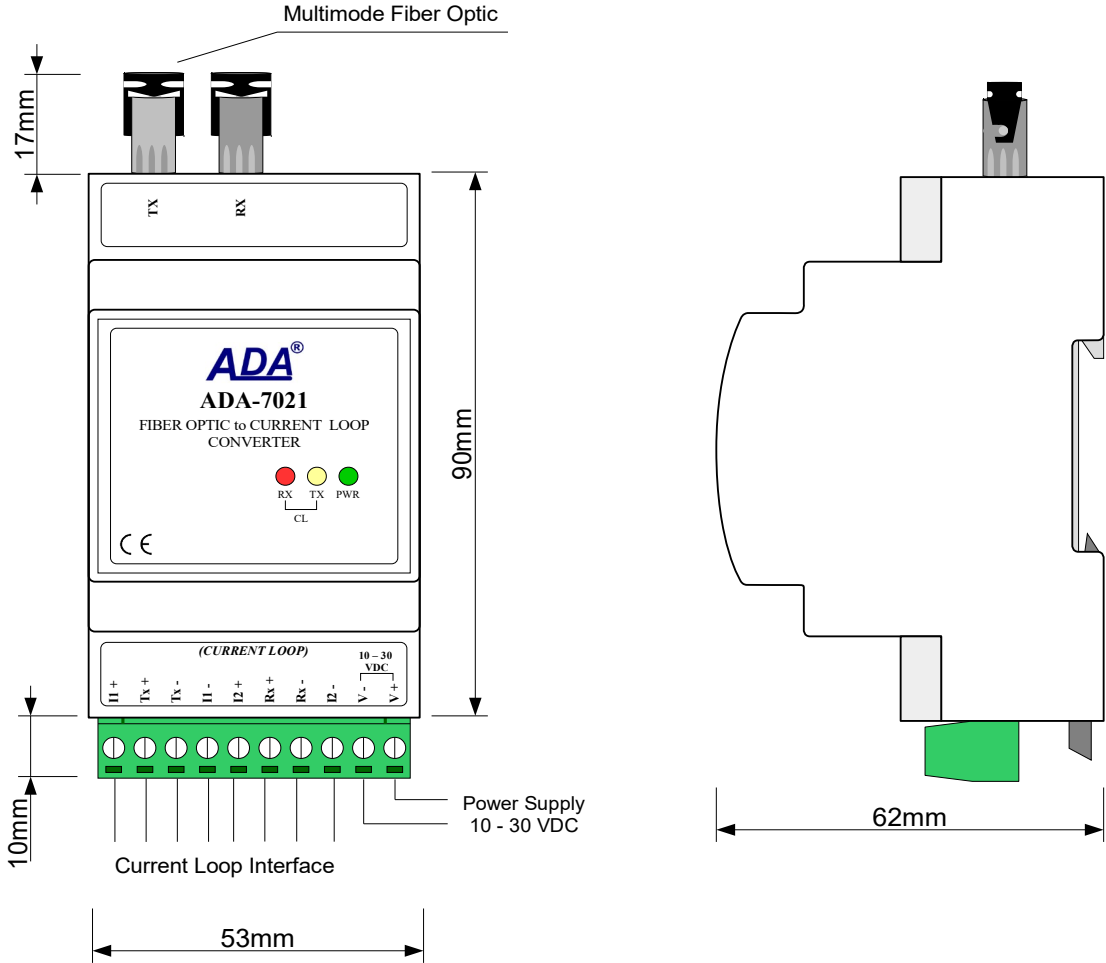
Transmission Parameters		
Interface	Fiber optic	Current Loop
Connector	ST® * type - transmitter and receiver for an optical wavelength from 792nm to 865nm, SC type - transmitter and receiver for an optical wavelength from 792nm to 865nm, SMA type - transmitter and receiver for an optical wavelength from 640nm to 675nm.	Screw terminal block - max. Ø 2,5mm²
Max. Line length	- up to 2000m for fibre type 50/125 mm, optical power budget Tx/Rx 9,6[dB], - up to 2500m for fibre type 62,5/125 mm, optical power budget Tx/Rx 15[dB], - up to 2000m for fibre type 100/140 mm, optical power budget Tx/Rx 15[dB], - up to 1500m for fibre type 200 mm HCS, optical power budget Tx/Rx 20[dB], - up to 20m for fibre type POF/1mm	Depends on the baud rate, a few kilometres.

Max. number of connected device	1	1
Transmission line	- fiber type 50/125 mm, 62,5/125 mm, 100/140mm, 200mm HCS. - fiber type plastic POF/1mm.	2-pair twisted cable eg UTPNx2x0,5(24AWG), shield inside large interferences eg (STP Nx2x0,5(24AWG)).
Max. baud rate	38,4 kbps	
Transmission type	Asynchronous full duplex, half duplex.	
Standards	Current Loop TTY : 0-20mA / 12VDC.	
Optical Signalization	PWR – green LED power supply, RX - red LED data receiving from Current Loop, TX - yellow LED data transmission through Current Loop.	
Electrical Parameters		
Power requirements	10 - 24 – 30 V DC	
Power cable	Recommended length of power cable < 3m	
Power	< 3W	
Protection from reverse power polarization	YES	
Galvanic isolation	1kV or 3kV between power circuit and signal line FO & Current Loop.	
Optoisolation	5kV – between signal lines FO & Current Loop	
Electromagnetic compatibility	Resistance to disruptions according to the standard PN-EN 55024. Emission of disruptions according to the standard PN-EN 55022.	
Safety requiring	According to the PN-EN60950 norm.	
Environment	Commercial and light industrial.	
Environmental Parameters		
Operating temperature	-30 ÷ 60°C	
Humidity	5 ÷ 95% - non-condensing	
Storage temperature	-40 ÷ +70 °C	
Casing		
Dimensions	53mm x 90mm x 62 mm,	
Material	ABS/PC	
Degree of casing protection	IP40	
Degree of terminal protection	IP20	
Weight	0,10 kg	
According to standard	DIN EN50022, DIN EN43880	
Location during work	Free	
Mounting method	On the rail compliant with DIN35 / TS35 standard.	

GALVANIC ISOLATION



DIMENSIONS AND CONNECTION



VERSIONS

	ADA-7021 -					
Electronic version:						
Standard	1					
Current Loop Voltage:						
24VDC		1				
12VDC (standard version)		2				
Current Loop Current:						
0 – 20mA (standard version)			1			
0 – 30mA			2			
Galvanic isolation:						
1kV= 3-way				2		
3kV= 3-way				3		
Fibre connectors:						
ST 850nm					1	
SC 850nm					2	
SMA 650nm					3	

Order example:
Product Symbol: **ADA-7021-1-2-1-2-1**
1 – standard electronic version,
2 – 12VDC CL voltage,
1 – 0 – 20mA CL current,
2 – 1kV 3-way galvanic isolation,
1 – ST-type 850nm fibre connectors,

* ST is a trademark of AT&T company.